

**REMARKS**

With respect to the drawings, the Office Action at paragraph 1 objects to several features as not properly identified. The specification has been amended without adding new matter to address the problems in the drawings. For example, the specification has been amended at page 3, lines 9-15 to include a proper description of the flow charts of the preferred embodiment of the method of the invention. Specifically related to the objection at page 5, lines 3-6, the specification has been amended to refer to Figure 4 and to eliminate numbers that are not shown on that drawing. Similarly, at page 5, lines 23-24, and following on pages 6, 7 and 8, corrections have been made to the specification to refer to the proper figure and eliminate numbers which are not used.

The Office Action goes on at paragraph 2 to reject claims 5-7, 9, 11, 13, 18 and 24 under 35 U.S.C. § 112, second paragraph as indefinite.

With respect to claims 5 and 18, both claims have been amended to eliminate the reference to a female connection.

With respect 9, the claim has been amended into proper Markush format to refer to the group of an aluminum, an aluminum alloy, a copper, a copper alloy and oxides thereof. Applicant respectfully further submits that it is known in the art that exothermic reactions involving initially solid reactants undergo oxidation and reduction processes which liberate heat in form reaction products. It is also known that applications of exothermic reactions such as thermite reactions include the welding of metallic members and cast forming of metal or ceramic parts. In such applications, the exothermic reactions are utilized to produce a superheated molten metal to cast parts or produce weld metal for the welding and joining of members. Thermite reactions which are exothermic reactions are generally described to be reactions between metal oxides and metallic reducing agents. The metal oxides chosen for the reactions are those which

have low heats of formation. The reducing agents are chosen for properties which exhibit oxide species with high heats of formation. The difference in the heat of formation of the reaction product metal oxide and the reactive metal oxide is the heat produced in the reaction and thus, such reactions are exothermic. For example, Applicant specifies at page 6, lines 16-20 that the exothermic material preferred for the invention is a powdered metallic material. The application goes on to point out that examples of usable powdered materials include aluminum, copper, tin, alloys of aluminum and alloys of copper, oxides of these metals, particularly including copper oxide.

An example of what is found in the art is shown in United States Patent No. 4,881,677 to *Amos*, also cited by the Office Action. For instance, it is well known that thermite reactions regarding these metals include the following:

- (1)  $3\text{Fe}_3\text{O}_4 + 8\text{Al} = 9\text{Fe} + 4\text{Al}_2\text{O}_3$
- (2)  $3\text{FeO} + 2\text{Al} = 3\text{Fe} + \text{Al}_2\text{O}_3$
- (3)  $\text{Fe}_2\text{O}_3 + 2\text{Al} = 2\text{Fe} + \text{Al}_2\text{O}_3$
- (4)  $3\text{CuO} + 2\text{Al} = 3\text{Cu} + \text{Al}_2\text{O}_3$
- (5)  $3\text{Cu}_2\text{O} + 2\text{Al} = 6\text{Cu} + \text{Al}_2\text{O}_3$

With respect to claims 11 and 24, the claims have been amended to place the choice of which cleaning method to use in a proper Markush format.

With respect to claim 13, the claim has been amended to place a choice of steel and alloys of steel in proper Markush format.

At paragraph 5, the Office Action rejects claims 1-9, 12 and 13 under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of *Amos* and *Takaki*.

Applicant has amended claim 1 to include the additional steps of providing a socket having an opening parallel to the longitudinal axis of the wire rope and open frustoconical

portion, inserting the wire rope and frustoconical termination into the slotted opening using a motion perpendicular to the longitudinal axis of the wire rope, abutting the frustoconical termination against the open frustoconical section of the slot and connecting the connector to a mining excavation bucket. For this reason, claim 1 avoids both *Takaki* and *Amos* since neither reference shows nor suggests that the steps described and now claimed by Applicant. Support for this amendment is found in the specification at page 7, lines 18-21 and specifically at Figure 7.

With respect to claims 2, 3, 5, 8, 9, 12 and 13, no amendments have been made, however, since claim 1 is now believed to be patentable and these claims depend from claim 1, they should be in condition for allowance.

With respect to claim 4, the claim has been amended to further avoid the prior art by adding a termination weight range between about 1500 and about 2800 pounds. The prior art of record does not disclose nor suggest this weight range for termination for excavating and mining equipment.

With respect to claims 6 and 7, both of these claims have been canceled and therefore, the rejection is moot.

The Office Action rejects claims 10 and 11 under 35 U.S.C. § 103(a) in view of the combined teachings of *Amos*, *Takaki* and further in view of *Peeling*.

Claims 10 and 11 depend from claim 1. Claim 1 has been amended to include limitations which are neither shown nor suggested by *Amos*, *Takaki* or *Peeling*. For example, as shown in Figures 1 and 2 of *Peeling*, the socket 11 forms a complete circle and a complete frustoconical receiver for the termination of the wire rope. *Peeling* does not disclose nor suggest the step of requiring the combination of a slot and a slotted frustoconical receiver as disclosed and now claimed by Applicant. For these reasons, claims 10 and 11 are believed to be in condition for

allowance.

The Office Action has further rejected claims 14-24 under 35 U.S.C. § 103(a) in view of *Takaki* and *Peeling*.

Claim 14 has been amended to avoid the prior art. Claim 14 has been amended to now require the steps of providing a socket having a slotted opening parallel to the longitudinal axis of the wire rope and an open frustoconical portion, inserting a frustoconical termination into the slotted opening using a motion perpendicular to the longitudinal axis of the wire rope and connecting the connector to a mining excavation bucket. Neither *Takaki* nor *Peeling* shows nor suggests the steps now recited by the claim. Support for this amendment is found in the specification at page 7, lines 18-21 and specifically at Figure 7.

With respect to claims 15, 16, 18 and 21-24, each of these claims depends directly or indirectly from claim 14 (due to the amendment of claim 15) and therefore are submitted to be patentable since claim 14 is now believed to be patentable.

With respect to claim 17, the claim has been amended to further distinguish from the prior art by requiring the termination weigh between about 1500 and about 2800 pounds, which is neither shown by nor obvious from the art of record.

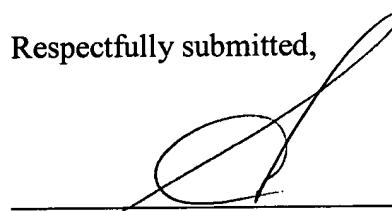
It is noted that the double patenting rejected in this application remains a provisional double patenting rejection. If the provisional double patenting rejection becomes the only rejection in this application, Applicant will proceed in accordance with the practice set forth in MPEP § 804.

**CONCLUSION**

For the reasons advanced above, it is respectfully submitted that the claims, specification and drawings are in full compliance with the requirements of 35 U.S.C. § 112 and that the claims are patentable over the prior art.

Allowance of the claims is earnestly solicited.

Respectfully submitted,

  
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